

INDIANA YARD WASTE SOLUTIONS

Yard Waste Source Reduction Strategies

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Source reduction programs are those activities that allow yard wastes to remain at its generation site and out of the waste stream. It has only been in the past few decades that residents have removed grass clippings from their lawns. Collecting grass clippings has been mainly attributed to the popular but false notion that grass clippings contribute to thatch buildup.

Some examples of source reduction include residents leaving their grass clippings on their lawns, leaving their leaves on their lawns and using a mower or mulching mower to break them into small pieces, using grass clippings and leaves as mulch, and using lawn clippings, leaves or broken or chipped twigs as garden path or playground cover. Utilizing piles of brush for wildlife habitat and the chipping of small tree limbs, by small chipping machines, are other examples of source reduction.

Benefits and Drawbacks

Benefits of source reduction include saving bagging time and money, returning precious nutrients and organic matter back to the soil, reducing the need for fertilizer applications, and keeping the materials out of the waste stream. In addition, when citizens receive educational materials about yard waste source reduction practices such as home composting, they can also learn some important environmental lessons, such as the cyclical processes of nature. As a result, they may be more receptive to larger scale programs, or at the least not be opposed to them, even if they do not choose to actually compost at home.

In most cases, source reduction will require residents to evaluate their current yard care procedures and make necessary changes to reduce the amount of waste materials generated. Benefits and limitations of yard waste management approaches should be presented, or participants may be discouraged. For example, residents should be aware that some materials can provide a home for unwanted insects or contribute to the propagation of plant diseases. For example, clippings from a heavily diseased lawn may need to be collected. Therefore, education of residents is critical if source reduction programs are to be a success, and should be considered in the cost of the program. Additional costs may be incurred by residents who choose to purchase mulching mowers or backyard chipping machines. Also, some residents may not be able to use all the yard debris they generate.

Leaving Grass Clippings Lie

Many lawn care experts have recommended altering our current lawn care practices in order to maintain a healthy lawn and to avoid excessive clippings. According to Richard O. Crum, from the Purdue University Marion County Cooperative Extension Service, the keys to a quality lawn are proper mowing

height and frequency, fertilizing primarily in late summer and early fall, and recycling clippings. The end result is an attractive lawn, less work and a clean environment.

Fertilizer should only be applied when the grass needs it. Late summer (September) and fall (November) are the principal times to fertilize lawns. By fertilizing lawns at these times instead of the late winter or early spring, root growth instead of top growth will be encouraged. The lawn will have a lengthened period of green in the fall, will have earlier spring green-up without excessive shoot growth and the plant's energy reserves in the roots will remain higher during spring and summer, which can result in a reduced incidence of summer diseases in the plants.

Not only will proper fertilizer application encourage a healthy lawn, it will also keep grass clippings to a minimum. Currently, many persons make late winter and early spring lawn fertilizer applications. This timing of fertilization encourages fast leaf blade growth and also means extra mowing and clippings to manage.

As stated in a brochure by the Olmsted County Extension Service in Rochester, Minnesota, fertilization needs of a lawn can be reduced, not only by proper timing of application of fertilizers but by mowing procedures. If mowing procedures cut off only a small part of the grass plant, they will break down easily and are a benefit because they recycle enough elements back to the soil so that one fertilizer application can be eliminated.

Leaving grass clippings on the lawn all season long does not contribute to the buildup of thatch, described as the layer of partially decomposed organic matter that builds up between the soil surface and the actively growing vegetation. Thatch develops if organic matter is generated faster than soil organisms decompose it. Thatch can be encouraged by soil compaction, lawn rolling and poor watering practices. Aerifying the soil in the late summer or early fall is the ideal way to manage thatch.

In order to reduce the amount of clippings produced by mowing, use a mower with a sharp blade and cut no more than one-third of the grass height with each cutting. Generally speaking, a 2 ½ to 3-inch mowing height is ideal for most lawns. In the summer, increasing the mowing height by one half inch improves the lawn's ability to tolerate stress. To maintain these ideal heights, spring mowing may be necessary every four or five days while summer mowing will be needed less often.

In some circumstances, grass clippings should be removed. For example, if the lawn is heavily diseased, removing clippings can reduce the population level of disease organisms. If grass is mowed when wet, clippings may need to be removed so the matted clippings do not smother the grass. If the grass has been allowed to grow too tall, excessive clippings may need to be removed for the same reason.

Your county's Cooperative Extension Service can provide additional written and video information on lawn and turf care. The location of the Purdue University Cooperative Extension Service in each county can be found at: www.IN.gov/idem/oppta/recycling/organics/programs/puextention.html.

Although proper cutting height and frequency of mowing are adequate to return the clippings to the lawn, some homeowners may want to purchase special mulching mowers. These mowers have bigger engines and a taller mowing chambers than standard lawn mowers. The taller mowing chambers allow

grass clippings to be suspended long enough to be chopped up and returned to the lawn as hundreds of tiny pieces that are almost invisible. Some models have a series of deflectors to send the clippings back into the blade. Mulching mowers can cost twice as much as conventional mowers, but the cost is beginning to go down as more firms begin to manufacture and sell them in response to the demand for the mowers.

In addition to leaving grass clippings on the lawn, small amounts of leaves can be chopped and left on lawns. Also, some mulching mowers are designed or have special attachments to allow for the chopping of leaves. However, if large quantities of leaves are left on lawns, they can mat down and smother the grass. Large quantities of leaves can be shredded and collected for use as mulch or collected for composting as described in the next sections of this manual.

Organic Mulches

Mulching is the utilization of material on the soil surface around garden plants, flowers, or trees. Mulching is done for many reasons. Mulches can aid in weed control, lessen the need for watering, reduce shock to plants from weather extremes, reduce erosion, and aid in garden appearance. Additionally, after the growing season has ended, mulches can be turned into the garden to add valuable organic matter to the soil.

Mulches can suppress weeds, thereby reducing the need for garden maintenance and chemical weed controls. When weed-free mulches are applied correctly, weed seeds in the soil won't germinate or are unable to penetrate the mulch layer. Since mulches help to keep the soil loose, any weed seeds that do sprout can be easily pulled out. A thin layer of finely shredded mulch is more effective than a similar layer of unshredded, loose material.

Mulches keep the soil moist by reducing the amount of soil water lost at the surface through evaporation. The benefit to residents is that less watering of gardens is needed to keep plants healthy. Organic mulches that have been incorporated into the soil during previous years also help the soil to soak up water. Mulch serves as a cushion for garden soils and can minimize soil compaction caused by walking on wet soil. Mulches prevent soil from washing away or becoming hard by heavy rains. However, if mulches are kept too wet, excessive amounts of molds, fungi or undesirable organisms can begin to grow. If the growth of these organisms becomes a problem, occasionally stirring the mulches or mixing them with dryer materials may remedy the situation. On the other hand, applying very dry mulches can cause moisture to be soaked up from the soil.

Mulches act as soil insulators, and help to maintain a constant soil temperature. This keeps plant roots cool in summer and warm in winter and can save sensitive plants during periods of extreme heat or freezing and thawing. This insulation quality also allows soil organisms to continue their activity at an even rate. Mulches should be applied around established garden plants in mid-spring, when the soil has warmed up sufficiently for active root growth. If mulch is applied before the soil has warmed up sufficiently, it will keep the ground cool and delay root development. Mulches can be applied directly to some new plantings, such as potatoes. Other plants, like tomatoes, should remain unmulched until the plant is well started. For items planted in the fall, mulching immediately will help the soil retain heat and allow for a longer period of root growth before the cold weather sets in.

Mulches can give a neat appearance to flower or vegetable gardens or trees and shrubbery. This may be particularly important for schools, businesses, parks, churches, or other community focal points, in addition to homeowners. Many different types of yard wastes can be used as organic mulches. These include grass clippings, leaves from deciduous trees and wood chips.

Grass clippings can be spread in thin layers over vegetable and flowerbeds, or mixed with leaves and spread in a thin layer. Since most residents who have gardens also have lawns, grass clippings are among the most commonly available and inexpensive mulching materials. Grass clippings that are collected are easy to handle, will fit in small spaces and will give a neat appearance when dried. Clippings will decompose and return to the soil in the course of a growing season.

It is usually best to use dry grass clippings as mulches to maintain the soil's nitrogen level and avoid unpleasant odors. If using fresh clippings, apply them loosely so they do not mat down and generate an offensive odor as they decompose. Applying a thin layer of green mulch will temporarily utilize available soil nitrogen while it decomposes, although the condition is usually short lived and should not stunt plant growth. If grass is applied very heavily, however, a nitrogen deficiency may result. If lawn herbicides or pesticides have been applied, do not use grass clippings for at least eight weeks after the application date. If used before that time, the treated clippings could adversely affect plant growth in the garden.

Leaves can be spread around shrubbery in the fall. Shredded leaves make a better mulch than whole leaves, because they do not mat together as much when they are wet. Unshredded leaves can be mixed with another light material, such as straw or grass clippings, so they do not become a soggy mass. Mixed leaf mulch can be applied for winter protection of perennial plants.

Wood chips can be used around trees and shrubs or can be used as garden path cover or cushioning materials around or under playground equipment. Wood chips can be created by utilizing small backyard chipping machines or by otherwise breaking up twigs and sticks. In addition, wood chips may be available through a local tree service or utility company, or from a community-chipping program. For more specific information on chipping programs, refer to IDEM's web page at <http://www.IN.gov/idem/oppta/recycling/organics/materials/wood.html>

Brush Piles

As more land areas have been developed, natural wildlife habitats have decreased. Brush and limbs can be piled to create shelter from weather and predators for wildlife, such as birds and rabbits. According to wildlife biologist Mark Bennett, artificially built brush piles can be particularly effective as wildlife shelter if they are located near the boundary of two habitats, (i.e., between a backyard and a wooded area). Although the piles can be smaller, a size of 12 feet in diameter and 5 feet in height is suggested as an ideal size. If landscaping plans can accommodate a brush pile, the need for management of this yard waste can be reduced in addition to creating wildlife shelter.

Residential Backyard Composting

Home composting takes the waste disposal problem and stops it at its source. It reduces the amount of yard waste that municipalities need to collect as part of their municipal composting programs. By

avoiding municipal collection, processing and distribution costs, home composting represents the lowest cost management alternative.

However, home and municipal yard waste composting should be seen as complementary activities. Home composting helps to familiarize the public with the concepts behind a large-scale municipal program. Because home composting diverts at least some yard waste and provides hands-on experience with the composting process, a home composting education program is an important component of an overall yard waste management strategy.

Some materials can be easily recycled at home. Grass clippings are best left on lawns where they recycle their nutrients. A combination of green (high nitrogen content) wastes, such as grass clippings and brown (high carbon content) materials, such as leaves and garden wastes, will start an ideal pile. If grass clippings are composted alone, they can generate offensive odors, while composting leaves alone will take a very long time. Fruit and vegetable food wastes are another example of materials that are easy to compost at home. However, addition of meat scraps, grease, eggs, and other food stuffs will attract rodents, and scavengers, such as dogs and raccoons, especially if the these food wastes are not properly incorporated into the compost pile or the compost pile is not protected from intrusion by animals. Therefore, do not add these non-plant foodstuffs to home compost programs, so that a pest problem does not result. Due to possible disease transmission, pet feces should not be composted in the backyard either.

There are many different types of home composting systems that can be used by residents. These can range from simple passive compost heaps in a corner of the yard to contained piles, which may be turned periodically to keep the pile actively composting. The containers for piles have included wood pallet containers, containers made from fencing or block materials, or even barrel-like containers which can be turned upside down. In addition, some systems to handle residential yard and food wastes incorporates worms to break down the organic materials. The composting process of the backyard operations are basically the same as for large-scale operations.

Yard maintenance contractors can help encourage home composting. In areas where tipping fees are high or disposal sites distant, some contractors offer clients reduced fees if the yard waste is managed at the client's site. In this arrangement, either the yard maintenance contractor or the homeowner can construct and/or manage the backyard compost pile.

Sometimes local ordinances, codes, and association rules prohibit or discourage home composting, and these may need to be amended. Backyard composting does not pose public health problems. Different techniques for composting on large or small lots, and even in apartment buildings, can ensure that home composting takes place in a safe, acceptable way.

Purdue University Cooperative Extension Service has a variety of backyard composting written and video resources at www.IN.gov/idem/oppta/recycling/organics/links.html

Educating Your Community

Educating the community about yard waste management options is critical to the success of the programs. The purpose of educational programs includes helping citizens understand how yard waste

methods work, such as the workings of a compost pile and how to build one or why grass clippings left on lawns return nutrients back to the soil. This education process can also serve to familiarize residents with larger-scale programs which communities may develop.

Depending on the yard waste management program, different degrees of education will be required. For example, teaching a resident how to build and maintain a home compost unit will require more extensive educational methods than a promotional program to inform citizens about using paper rather than plastic bags to contain yard waste for community composting.

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